

**Amendments to the Abstract:**

Please substitute the new Abstract of the Disclosure submitted herewith on a separate page for the original Abstract presently in the application.

### **Abstract**

A method for processing environmental samples to remove or otherwise reduce the level of certain chemical species. In a preferred embodiment, the present invention contemplates a process for reducing the level of inorganic and/or organic chemical species in wastewater or other aqueous or semi-aqueous environments or other waste environments. The present invention further provides compositions of bacteria useful in modulating the redox potential of an environment to generate redox mediator species which facilitate the removal of particular inorganic or organic molecules from the environment or from samples therefrom. The redox potential is preferably modulated through microbial-mediated oxidation or reduction of metal cations under aerobic or anaerobic conditions, respectively. The present invention is further directed to a computer program which facilitates the controlled modulation of the redox potential of an aqueous or semi-aqueous environment or other environments.

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